

SECRET

25X1A

CENTRAL INTELLIGENCE AGENCY

-3-

ployees were engaged in dismantling, packing, and loading the equipment of the works, as well as such equipment from factories in the Western sectors of Berlin which the Russians had brought onto TRO grounds prior to turning these sectors over to the Western Powers. The TRO, in the course of dismantling, was stripped of practically everything. The Russians took all the machine tools, representing an estimated total value of eight million Marks, such as milling machines, coiling machines, drilling machines, metal planing machines, stamping machines, etc. They furthermore took drying closets, drying and heating ovens, cable connectors, sheet metal glueing machines, metal lacquering machines, test field installations, measuring devices, generators, transformers, and switches; they removed and shipped to Russia all high-tension wires and even the screening grids protecting installations in the works. In particular, they removed two short-circuit generators for 1 million KVA and 1.5 million KVA respectively. The first of these generators, when shipped through the Baltic Sea, had its metal bearings flooded, which became known when the Russians subsequently tried, without success, to recover the construction blue-prints of the generator. The other one (1.5 million KVA) was not completely mounted when the Russians seized it and its 3rd ton rotor (Läufer) was missing; subsequent Russian efforts to recover it were unsuccessful. Two 100-ton cranes belonging to the works but stored elsewhere during the dismantling period were seized and shipped to Russia late in 1948. All dismantled equipment was shipped by sea to Leningrad.

5. When the TRO resumed production in the latter part of 1947, they did so with equipment procured bit by bit from smaller enterprises, or manufactured by handcraft, or produced in the workshop of the plant. The works thus succeeded slowly in restoring its equipment; there has not been a second dismantling. When Russian production orders started to come in, the works even had a priority for the procurement of equipment. By October 1949, the TRO had again about 400 machine tools of all kinds. It also had one boring mill for horizontal as well as vertical boring. Four big coiling banks (Wickelbänke) for the production of coils up to ten tons, 10 coiling banks for coils up to three tons, and 40 coiling banks for coils up to 500 kg. It has one test transformer producing 300,000 Volts. Another test transformer for 1.2 million Volts with cascade connection of three times 500,000 V was being built in October 1949 and was expected to be completed by the middle of 1950. The TRO is still very poorly supplied with measurement devices; those available are mostly primitive or make-shift, lacking in precision.
6. By October 1949, the TRO had a total crew of about 3,600; roughly one third of them were technical and commercial employees. There is a strong tendency toward bureaucracy in this works, considering the development of the relation between technical and commercial employees; the number of technical employees included in the above figure does not equal the number of technical employees in 1939, whereas the commercial employees included in that figure have doubled in comparison to 1939. The works' crew reached its maximum in 1943/1944, going up to about 4,000; it shrank to about 2,600 by April 1945. When production was resumed after completion of dismantling in October 1947, the works did so with about 400 men; this number had increased to 1,200 by the end of 1948. In 1949, when large-scale and urgent Soviet production orders had to be filled, the crew strength reached 3,600 in the latter part of the year.
7. When the works resumed production in October 1947, it started out mainly with the repairing of small transformers, later bigger transformers belonging to enterprises throughout the Soviet Zone. This work was also done for the Russians, for the transformers were so-called "booty transformers" and were shipped to Russia after repair. The works was then under trusteeship administration; it became a people's owned enterprise in April 1948. At the end of 1947 and beginning of 1948, the first Russian production order was received which was filled during 1948: about a dozen transformers of between 500 and 600 KVA. These products were delivered to "Electro-Import, Moscow" which remained the

SECRET

~~SECRET~~

CENTRAL INTELLIGENCE AGENCY

25X1A

sole Russian customer of the works, i.e. all products are shipped there (with the one exception mentioned below). At the end of 1947, an order of the Berlin-Anhaltische Maschinenbau AG (BAMAG) requested delivery of 28 rectifier-transformers to be used for hydrogen electrolysis, the hydrogen being needed in Russia for production of margarine, according to the documentation of the order. These transformers were not finished until the latter part of 1949 and were expected to be ready for shipment by the end of 1949. The delay was caused by lack of transformer sheet metal. The first large-scale Russian production order was issued at the beginning, and filled during the course, of 1948; it requested delivery of 2,000 transformers of 50 KVA, some operating at 6 KV, others at 10 KV; they were provided with Russian switches by the works. In mid-1948, the Russians ordered production of about 25 transformers of 3,000 KVA and about the same number of transformers of 6,000 KVA, both kinds destined for smaller Russian enterprises for the purpose of transforming the current of overhead lines for use in the factories. The total value of goods produced in 1948 amounted to roughly 10 million DM (for comparison: in 1943, the works had an output of about 42 million Marks). During the first three months of 1949, production shrank to practically nothing because of the shortage of usable transformer sheet metal. To overcome this condition, the Russians provided, in mid-1949, a one-time supply of 100 tons of good sheet metal (see below) stemming from two foundries, "Red October" and "Red Banner", located in the Ural mountains. At the beginning of 1949, the Russians requested production and delivery within three months, of 1700 current transformers of 35 KV; later in the same year, they ordered production of 1600 voltage transformers of 35 KV. These transformers were used for the fabrication of enclosed switch gears produced for the Russians by the Sachsenwerk Dresden-Niedersedlitz and Dresden-Radeberg. In addition to these larger orders, smaller ones were carried out during 1949, as e.g. production of 20 current transformers of 200 KV, 45 current transformers of 110 KV, 20 voltage transformers of 200 KV, and 30 voltage transformers of 100 KV. In February, 1949, the Russians ordered production of a rectifier-transformer for 10,000 KVA and another one for 8,000 KVA, to be delivered to the Buna works in Schkopau, which needs them urgently for electrolysis; the transformers were to be completed by January 1950, but it is not believed that they will be ready for delivery by that time. Before the Russians established the blockade of Berlin, a 30,000 KVA transformer (Netztransformator) was sent for repair to the TRÖ by the RHE (Rheinisch-Westfälische Elektrizitätswerke), Essen, and was scheduled to be sent back in December 1949; however, it was learned that completion of the repair was deferred to the end of January 1950. In mid-1949, the TRÖ started production of electro-motors, a new item which the works had not produced so far. They did so on very pressing orders from the Russians, who attributed, then and later, a great degree of urgency and priority to the production of electro-motors. The works were ordered to produce, from the middle of 1949 to the end of the year, 5,000 electro-motors, a task which turned out to be impossible; 3,000 were actually produced. The order was given to TRÖ, although electro-motors are not in its line of production, because the SAG Motorenwerk in Wernigerode could not cover the Russian demands for electro-motors. The motors produced by the TRÖ in 1949, and those to be produced in 1950 are for three-phase current, squirrel-cage rotor motors of 37 kW, 380 V, with belt pulley (Riemenscheibe); they make 1450 revolutions per minute. The Russians ordered production of 12,000 of these motors for 1950 (in addition to those produced in Wernigerode) and insisted on the importance and urgency of this production program. Unlike other TRÖ products, the electro-motors are shipped to Maschino-Import, Moscow. The total value of goods produced by TRÖ during 1949 amounts to roughly 12 million DM (i.e. value of production during last nine months of 1949, because it was practically zero during the first three months, as stated above.)

6. Production in 1950 is to be greatly increased, upon Russian orders. The 1950 schedule foresees production of goods having a total value of 36 million DM. It is doubted that this figure will be reached, but a value lying between 25 and 30 million DM may be attained. In 1950, the works, for the first time since the war, will be allowed to produce for German consumption; the schedule foresees two transformers of 40,000 KVA, six transformers of 15,000 KVA, and about 28 transformers of 5,000 KVA, all of them to be delivered to the five Energy Districts (North, East, South, West, and Center) of the Soviet Zone. These transformers are regulating transformers. The 1950 production schedule includes the following Russian orders, either for shipment directly to Russia, or to SAG's:

~~CONFIDENTIAL~~~~SECRET~~

CENTRAL INTELLIGENCE AGENCY

-5-

25X1A

- a. four transformers of 50,000 KVA to be completed and delivered to the Wismuth AG by December 1950;
 - b. one transformer of 100,000 KVA, 220 KV, directly to Electro-Import, Moscow;
 - c. one transformer (load-regulating type) of 100,000 KVA to Electro-Import. It is believed that this will be the largest transformer of its kind existing anywhere; two more transformers of this kind are to be delivered in 1951;
 - d. 200 coupling condensers, one hundred of them for 100 KV and the other hundred for 200 KV, together with 200 high-frequency reactances for 100 KV and 100 reactances for 200 KV. From the documentation of this order, which came in during October 1949, it could be seen that these devices were to be used in Russia for high-frequency telephony over high-voltage lines;
 - e. 260 air-blast switches (Freistrahlschalter) for 100 KV with a circuit breaking capacity of 1500 MVA, to Electro-Import;
 - f. 80 switches of the same type for 220 KV with a circuit-breaking capacity of 2,500 MVA, to Electro-Import;
 - g. 12,000 electro-motors to Maschino-Import, as mentioned in the preceding paragraph.
9. In addition to production, research and development for the Russians is carried out at TRO. At the end of 1948, the Russians ordered the development of a circuit-breaking switch (Trennschalter) for 400 KV. As soon as completed, samples and blueprints will go to Russia. The 1950 development schedule foresees the completion of a sample of a mobile transformer for 400 KV lines. A detailed report on this subject was worked out in May 1949. Also in the development stage is a gas-pressure actuated switch with multiple circuit-breakers for 100 KV, with a circuit-breaking capacity of 2,500 MVA. The works has completed a sample of this switch which turned out to be unsatisfactory because the breaking points of the model were hardly accessible; development of this type is being continued. The TRO is furthermore engaged in the development of a 400 KV switch with a circuit-breaking capacity of 7,500 MVA, however its development has not progressed beyond the calculation and drafting stage.
10. For its main raw material, sheet metal, TRO has to rely chiefly on deliveries from steel works or rolling mills in the Soviet Zone, most of them reopened recently. The metal obtained from these mills is of poor quality because it is produced from scrap iron. The SAG Hüttenwerk Thale, one of the suppliers of TRO, furnishes a monthly supply of about 40 tons of sheet metal, a quantity which far from covers the demand of TRO. Moreover, this metal is of a very poor quality, having a loss figure of 1.55 watts per Kg. at 10,000 Gauss. (For comparison: The metal delivered in a single delivery from the two above-mentioned Ural foundries had a loss figure of 1.05; good American material has a loss figure of 0.65.) Other mills in East Germany supplying TRO are Stahlwerk Riesa, Stahlwerk Gröditz, Stahlwerk Hennigsdorf, and the Maximilianshütte. A rolling mill to be opened in Burg, near Magdeburg, is scheduled to supply TRO in the future. In October 1949, this mill was still in the planning stage. The TRO's demands for nickel-containing metals are mostly covered from West German firms and, probably by way of unauthorized trade, e.g. from Heraeus Vakuumschmelze in Hanau. The firm Kämmerer in Braunschweig has delivered sodium cellulose for insulation purposes to TRO. The TRO is in business contact with VEM/K-St (the former Koch und Sterzel firm) in Dresden, which has a production program very much like that of TRO but also produces X-ray equipment.

~~SECRET~~~~CONFIDENTIAL~~